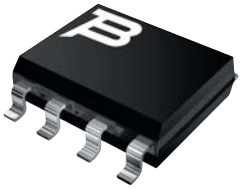
BOURNS®

Product Change Notification

TISP® THYRISTOR SURGE PROTECTORS



March, 2013

Models TISP8201MDR-S and TISP8211MDR-S Changes to Die and Package Materials

Description of Changes

This Product Change Notification describes changes to the die materials in Bourns® Models TISP8201MDR-S and TISP8211MDR-S 8-Lead SOIC (150 mil) package to improve the parts' robustness and optimize the manufacturing process.

Recent continuous improvement activities have demonstrated that an improvement in long term moisture resistance may be achieved by the addition of a Nickel/Gold (NiAu) metal overcoat to selective parts of the Aluminium (Al) chip metallization. NiAu is currently present on the backside of the die as a contact metallization.

The Bourns® Models TISP8201MDR-S and TISP8211MDR-S devices utilize similar silicon die for protection functionality. The change above will not affect form, fit or functionality of parts in application circuits since all active elements remain unchanged.

There are no changes to the Bourns® Model TISP8201MDR-S and TISP8211MDR-S data sheet ratings or electrical characteristics and the improvements in robustness are achieved by modification to a single metal mask layer. The wafer fab process flow and process settings are not changed for these products.

Qualification Requirements

Assessment of the appropriate qualification stress test for each of the changes is made in agreement with Bourns Major Change Control Specification 14-0503.

The identified change requiring qualification:

Design	Design Change
Front Metal	Material

Qualification by Similarity

Similar chip designs have recently been qualified as one of a pair of die within Model TISP9110LDMR-S in an 8-Lead SOIC (210 mil) package. The Bourns® Models TISP8201MDR-S and TISP8211MDR-S are qualified by similarity to Model TISP9110LDMR-S. Wafers are manufactured in Bourns' facility in Bedford, UK using similar wafer fab processing and assembled in packages using the same mold compound. Qualification results for the addition of Nickel/Gold (NiAu) strap are attached.

Product Labeling

The product marking and labels are unchanged.

Identification of the Changed Product
Bourns maintains traceability back to source wafer lots and assembly sites for all TISP® products.

Impact on Form, Fit, Function and Reliability
Product ratings and electrical characteristics are unaffected by the change. There is no impact on form, fit, function or reliability.

Samples
Evaluation samples are available from April 2013 onward.

Implementation Date
First date code using above changes: 1337
Deliveries of such products may occur from September 2013 onward.

If you have any questions or need additional information, please contact Customer Service/ Inside Sales.

TISP9110LDMR-S

Product Qualification Report

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Description of product range: Qualification of changes to the design and material content of TISP9110LDMR-S

Qualification sample information is as follows:

Die Technology:	Bipolar SCR Protector	Assembly Site:	AIC Penang, Malaysia
Die Name:	5TY800TQ/5TY900TQ	Mold Compound:	Sumitomo G600
Top Metal :	Al & AlNiAu	Die Attach:	Ablestik 84-1LMISR4
Back Metal:	AlNiAu	Bond Wire:	2.0 mil Copper
Wafer Fab:	Bourns, Bedford, UK	L/F Material:	Copper
		Lead Finish:	100% Matte Tin

Description: Changes to Chip Metal Protection, Copper Wire Bonding, Die Design and Leadframe Design as described in the issued PCN.

Stress Test/Conditions	Standard	Method	SS/Accept	Lot 1	Lot 2	Lot 3
Moisture Induced Stress Sensitivity	EIA / JESD22	A113	Level 1	MSL1 Precondition @ 260C Prior to Critical Stress Tests		
HTRB, 150°C, 1000h (Note 1)	JESD22	A108	76/0	76/0	76/0	76/0
THB, 85°C/85%RH, 1000h (Note 1)	JESD22	A101	76/0	76/0	76/0	76/0
HAST, 110°C/85%RH,264h (Note 1)	JESD22	A110	45/0	45/0	45/0	45/0
Temperature Cycle, -65/+150°C, 200cs (Note 1)	JESD22	A104	76/0	76/0	76/0	76/0
ESD HBM, 1.0kV, Class 1C	JESD22	A114	3/0	3/0	3/0	3/0
Die Shear Strength, >5 kg	MIL STD 883	2019.7	32/0	32/0	32/0	32/0
Bond Pull Strength, >12 g	MIL STD 883	2011.7	32/0	32/0	32/0	32/0
Wire Bond Shear, >100 g	JESD22	B116	32/0	32/0	32/0	32/0
Electrical Parameter Assessment	JESD86		32/0	32/0	32/0	32/0

Notes: 1. Preconditioned according to JESD22 A113 Level 1 at 260 °C peak reflow temperature prior to Qualification Reliability Testing